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THE AGRICULTURAL HISTORY SOCIETY

THE AGRICULTURAL HISTORY SOCIETY was organized in 1919 to promote interest, study, and research in the history of agriculture. The Society holds an annual meeting in Washington, D. C., in the spring or early summer. Through an affiliation agreement, it has a session and a dinner in connection with the annual meeting of the American Historical Association. At present the Society has two hundred and seventy members.

Three volumes of *Agricultural History Papers* have been published in co-operation with the American Historical Association as part of its annual reports. These volumes have also been distributed separately by the Society.

In 1927 the Society began the publication of *Agricultural History*, a quarterly journal which is being developed as a medium for the publication of research and documents pertaining to the history of agriculture and as a clearing house for information of interest and value to workers in this field. The words, "agricultural history," are interpreted broadly. Materials on the history of agriculture not only in the United States but in all countries and in all periods of history are included, and also materials on institutions, organizations, and sciences which have been factors in changes in agriculture. Two issues were published in 1927. *Agricultural History* is being issued quarterly in 1928.

The Society is constantly receiving calls, chiefly from libraries, for copies of the early issues of its journal. The Society's supply of the first number of the first volume is exhausted. Anyone having a copy of this number which he does not want will be doing the Society a great service by sending it to the Editor or letting him know of its availability.

At the present time the Society's outstanding need is funds with which to increase the size of its journal. Members of the Society can help materially by remitting dues which are unpaid and making active efforts to secure new members.

Members can also help fulfill the purposes of the Society by reporting news of research and other activities relating to agricultural history, the location of important documents and papers pertaining to this field, and making suggestions of ways of extending the influence and the scope of the work of the Society.

Correspondence concerning membership, contributions, manuscripts, and books for review should be sent to the Editor.

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THOSE KANSAS JAYHAWKERS

A STUDY IN SECTIONALISM

BY EDWARD EVERETT DALE¹

It was late in the summer of 1901 that a small party of us—all Texans—were taking a train load of cattle to Kansas City. There were half a dozen men in the group. Among them was Ellison Carroll, one time champion roper of the world. He had

¹ Professor Dale, head of the history department of the University of Oklahoma since 1924, was born in Texas and grew up on a homestead near the border of the Kiowa-Comanche Indian Reservation. After completing a common school course he worked as a cowboy and ranchman for five years. He hunted and trapped during two winters, kept post office and worked in a store that supplied whites and Indians, and served as deputy sheriff. He also taught country schools. In 1909 he completed a course at Central State Normal School, Edmond, Oklahoma. He received a bachelor's degree from the University of Oklahoma in 1911. In 1914, he received a master's degree from Harvard University. In 1922 Harvard granted him a doctor's degree, his thesis being a History of the Range Cattle Industry in Oklahoma. He has been superintendent of schools in Roosevelt and Blair, Oklahoma, and instructor in the Summer School of Central State Normal School. In 1914 he became an instructor in the history department at the University of Oklahoma and has been connected with that department ever since. He taught at the University of Texas during the summer of 1926. He was president of the Oklahoma State Folk Lore Association from 1915 to 1919. In 1925 he served as Research Agent for the United States Department of Agriculture. During 1926-27 he served as a specialist in the economic history of the west on the committee organized by the Institute for Government Research at the request of Hubert Work, until recently Secretary of the Interior, which made a detailed study of Indian affairs in the United States. Professor Dale has written *Tales of the Tepee*, *Territorial Acquisitions of the United States*, *A History of Oklahoma* (with James S. Buchanan), *Letters of LaFayette*, and articles on the Indians, the range cattle industry, and pioneer farming in the Southwest. He was for sometime associate editor of *Chronicles of Oklahoma*, the official magazine of the Oklahoma Historical Society. The article here printed was read by Professor Dale on the occasion of his presidency of the Agricultural History Society at its tenth annual meeting, Washington, D. C., September 13, 1927.

fourteen cars of three and four year old steers, and was accompanied by two of his cowboys. Also there was Jim Martin with half a dozen cars, the author with four cars of "long twos," and finally Bill Jones, a lean, lanky cowpuncher who was in charge of three cars for his employer, a small ranchman of the South Panhandle.

It was a long and tiresome trip in the caboose of the cattle train. There was little opportunity to get food, the weather was hot, the road rough, and the seats uncomfortable. Conversation that had started out bravely enough began to languish after twelve or fourteen hours. Men smoked cigarette after cigarette, or exercised their hungry jaws on large quids of plug tobacco in lieu of food. Among the tobacco chewers Bill Jones stood like Saul of old, "head and shoulders above all Israel." Bill was a real, ruminant animal, and as he rolled his cud about in his mouth he expectorated largely and frequently in the general direction of the cuspidor, but apparently without any real ambition to hit the target. Bill was merely snap-shooting and finally seemed to forget the mark entirely and to fire completely at random.

At a division point some distance up in Kansas the train took the siding and a fresh crew came aboard. The new conductor hustled in, his hands full of papers, just as Bill delivered a particularly heavy barrage which seemed to have no objective whatever.

The train official frowned, glanced at numerous other small, yellow pools on the floor, and spoke sharply.

"There's a good spittoon right over there." He exchanged his bundle of papers for others and hastened out again. Bill gently hitched up his trousers, shut his teeth with a snap, and spoke through them with deep feeling.

"That's jist th' way. The fu'ther up in Kansas you go, the more dam p'tickler they git."

Bill Jones was no orator. Like Mark Anthony he had "neither wit, nor words nor worth" and yet all unconsciously he had constituted himself the spokesman of a great commonwealth. It was the people of Texas who were speaking through the irregular, tobacco-stained teeth of this lanky cow hand, hinting of a feud hardly less bitter than was that of Montagu and Capulet. Be-

hind the pungent remark of Bill Jones lay nearly half a century of history, the details of which are now well-nigh forgotten.

Among the pioneer settlers of Kansas the New England element bulked large. The town of Lawrence, together with many other Kansas villages, was founded by New England Puritans. Narrow and bigoted as some of them undoubtedly were, they were nevertheless men who dreamed dreams and saw visions. They had come out to these western prairies, their hearts aflame with one great purpose, the making of Kansas free territory. Descended moreover, from hardy, stiff-necked leaders of a church militant they stood ready to back their antislavery principles with Sharps rifles. Ideals were to them something for which men fought. Always they held in memory the heroic example of an ancestry who had battled for liberty and made good by force of arms their declaration that "taxation without representation is tyranny."

Settling upon their hundred and sixty acre prairie claims they built rude sod houses to shelter their families, plowed little fields and planted crops. A frugal, industrious, God-fearing people, they had no fears for the future. They were crusaders called of God to make Kansas free. Willingly would they endure privation, heat, cold, drought, hot winds, and the onslaught of human enemies if only this purpose might be realized. "Per aspera ad astra," the state motto of Kansas, was to them but a simple statement of the task before them. No matter how rough and stony the way, they would travel it gladly if only at the end they might see the stars of freedom shining above the land they loved and had made their own.

Side by side with the Puritan abolitionists came many other people. Some were from the prairies of northern Ohio or Illinois and were New Englanders but two or three generations removed. Others were German immigrants, a thrifty, pious folk, almost as much opposed to slavery as were the Puritans themselves. Still others were Scandinavian in origin, descendants of the old sea kings of northern Europe whose courage and hardihood have formed the theme of many a tale and poem. Yet the New England element largely furnished leadership and gave shape and color to the life and ideals of all the rest.

The people who settled Texas were of a far different breed. Generally speaking they were Southern Uplanders, many of them Scotch-Irish, and were of the most hardy and adventurous type. Their ancestors had poured westward through Cumberland Gap and other passes of the lower Appalachians to the fertile glades and meadows of Kentucky and Tennessee, pushing a long tongue of settlement far out into the wilderness. Here they had lived in pallisaded stations, or fortress-like log houses, holding with their long rifles these hard-won lands against hordes of painted savages who constantly stormed at the far-flung settlements in a desperate attempt at "letting in the jungle."

Growing up under such conditions many of their children migrated to Texas to find there ample opportunity for the exercise of those peculiar talents learned in the hard school of life on this older frontier east of the Mississippi. The prowling bands of fierce, treacherous Comanches and the raids of thieving Mexicans made the life of the people of the early Texas settlements one of continuous peril. The rifle, the pistol, and the huge knife named for the Texas pioneer, James Bowie, must be every man's constant companions, and unfortunate indeed was he who lacked skill in the use of them.

Texas was peculiarly a man's country. A woman of this region in early times is credited with having written to relatives in the East that: "Texas is a good country for men and dogs, but an awfully hard place for oxen and women."

Yet there were many women there too; strong, resolute pioneer women with big, unselfish hearts and busy, skillful hands who shared unflinchingly the hardships and dangers of husband or brother.

Independent and individualistic as were the Texans, the ever-present menace of Indian attack forced the people of each settlement into coöperation and mutual helpfulness. This tendency was greatly extended and intensified by the War of Independence, and the years of life under the Republic. A certain solidarity and national consciousness grew up. The people felt themselves cemented together by the blood of Travis and Crockett and Bowie. Common hardships and dangers, plus a remarkable

historical heritage, bound them together "with hoops of steel." The Alamo and San Jacinto were to them quite as sacred words as were Lexington and Yorktown, and Houston and Austin quite as much national heroes as were Washington and Franklin. For ten years they lived under the Lone Star flag, citizens of the independent republic of Texas. Then came annexation to the United States, but the tradition still persisted. Texas had stamped its brand indelibly upon the hearts and lives of its sons and daughters.

Thus by 1860 Texas and Kansas, separated only by the lands of the Indian Territory, had been settled by populations as unlike as any two people can well be. The Texans were a strong, hardy race of men on horseback, proud of themselves and of their state, and of the fact that they had won their broad lands by their might and held them by force of arms against all the power of Mexican and Indian enemies. Pro-slavery by instinct and training as they were, but few of them owned a large number of negroes. Yet they were Southerners. In their blood was the hospitality and chivalry of the Old South mingled with the hardihood, adventure and self-reliance of the West.

In so far as they thought of the Kansans at all, it was to regard them as narrow, intolerant, penny-pinching, Yankee abolitionists inhabiting a land where each family was confined to a petty hundred and sixty acre claim, while in their own country every man measured his lands by leagues or square miles. The very qualities which made the people of Kansas great—thrift, frugality, and a sincere belief in the rights of the poor and ignorant negroes—were in the eyes of the Texans little better than vices and weaknesses. To these men of the Southwest smallness of farms must inevitably connote smallness of ideas, and a willingness to fight for the freedom of the slaves was only wrong-headed obstinacy.

On the other hand the Kansans regarded these men of Texas as a rough, wild, lawless set who rode hard, swore hard, and feared neither God nor man. The hot Southern blood and skill in the use of arms branded them in the eyes of the Kansans as dangerous killers, and the latter hinted quite plainly that all too many of

the Texans were the descendants of men who had fled beyond the Sabine to escape the penalty for crimes committed elsewhere.

That the Texans were hard riders cannot be denied. Conditions of life in that state often demanded hard riding. Not only was this due to constant Indian warfare, but Texas was by 1860 a great pastoral region. Almost the first Spanish colonists brought in cattle, lean, long-horned animals of the type raised by the Moors for centuries on the Plains of Andalusia. These increased amazingly and later mixed with the cattle of north European breeds brought in by the early American settlers. The result was an animal, larger and heavier than were the early Spanish cattle, yet with sufficient hardihood to live and thrive throughout the year upon the open range.

Everything tended to promote the herding industry. The climate was mild, grass and water abundant, and the land laws liberal. Mexico early gave out large land grants to individuals and this policy was continued by the Republic and later by the State of Texas. Huge tracts were sold at low prices upon liberal terms of payment. As a result Texas at the time of the outbreak of the Civil War was, broadly speaking, a region of great landed proprietors, many of whom numbered their cattle by hundreds or even by thousands.

The war came and the Texans, "ever ready for a fight or a frolic," and quite likely to regard the fight as a frolic, hastened away to join the armies of Lee, Johnston, or E. Kirby Smith. For four years they fought bravely under the Stars and Bars proving their mettle upon many a blood-stained field. During all this time their home land was of all states of the Confederacy the least touched by war.

While the army of Sherman ate a hole fifty miles wide across Georgia and the Carolinas, while Virginia was ravaged by armies of both North and South, and while the fields of Louisiana and Mississippi lay fallow, and grew up in bushes and briars for want of laborers to till them, the cattle on the broad plains of Texas grew mature and fat and increased rapidly in numbers under the favorable conditions of range and climate. The women and children were able to brand most of the calves each spring, the

state was untouched by hostile armies, and the opening of the Mississippi by the North made it impossible for the Confederacy to draw upon the great store of Texas cattle to feed its hungry armies. As a result, when the war closed and the Texans returned to their homes, they found their ranges fairly overflowing with fine, fat cattle.

For these animals there was no market. Stock cattle could be bought upon the range for from one to two dollars a head while a fat beef would sell for not more than six or seven dollars. Yet at this very time cattle were selling upon the northern markets at eight to eleven dollars a hundred and beef was retailed at from twenty-five to forty cents a pound. Out of this condition grew the so-called "northern drive."

Most of the Texans returning from the southern armies reached home in the summer or early autumn of 1865. An impoverished people, they must look to the only movable property they possessed—the great heads of cattle—for means to support their families and improve their lands. Valueless as were these cattle at home their owners soon learned of the high price of beef in the northern cities and began to lay their plans to reach a market. Accordingly in the winter of 1865-6 large herds were collected at many points in Texas preparatory to driving north as soon as grass should be sufficiently advanced to make a start possible.

The journey was usually begun late in March, or early in April. The herds varied in size from one thousand to three thousand large choice steers, and each herd was accompanied by the "boss" and from eight to fourteen cowboys, together with a cook who drove the chuck wagon in which was hauled the food and bedding.

The usual route followed was north from central Texas, passing just west of Fort Worth, and traversing the strip of prairie between the upper and lower cross timbers, past Denton and Sherman to Red River. Beyond that stream the line of travel was north across the Indian Territory, past Boggy Depot, thence northeast across the two Canadians, and on past Fort Gibson to the Kansas line just south of Baxter Springs.

Skilled as most Texans were in the handling of cattle, and innured as they were to hardship and privation and long days and

nights in the saddle, few of them had had much experience in driving great herds for long distances on the trail.

Accounts left by some of these earliest drovers are little better than one long wail of trouble and misery. Heat, cold, hunger, rain, mud, thunderstorms, stampedes, swollen rivers, thieving Indians, outlaw whites, and dissatisfied men are but a few of the troubles complained of by trail bosses on these "personally conducted tours" of the summer of 1866, during the drive from Central Texas to Red River. Once beyond that stream there was added to all these difficulties endless annoyance from the Indians who demanded payment for grass consumed by the cattle, stampeded herds at night in order to collect money for gathering them again, and in many other ways proved themselves a constant source of worry and vexation. The war had but recently closed and conditions within the Indian Territory and along its border were lawless and unsettled. White thieves and outlaws, together with pilfering Indians, stole horses, mules, and cattle and made it necessary for the drovers to watch their property closely at all times.

However, when they reached the line of Kansas below Baxter Springs the trail drivers encountered fresh difficulties. Some small herds of Texas cattle had been driven north through Kansas and Missouri just before the war with the result that many native cattle in these two states had died of the dread "Texas fever." In 1866 the settlers of southeastern Kansas had by no means forgotten their losses from this disease in the years just preceding the war. Perhaps the extent of such losses had even been magnified with the passing years as the tale was told and retold about the Kansas firesides. Moreover, the wounds made by the war just closed were still raw and bleeding. To the Kansas abolitionists no good thing could possibly come out of Texas. Least of all could a quarter of a million of lean, long-horned, wild, disease-bearing, Spanish steers be considered a blessing. Rather they were a plague infinitely worse than that of the locusts visited upon a stubborn Pharaoh and his people. Armed bands of stalwart Kansas farmers were quickly formed to stop the herds of Texas cattle at the border and to warn the drovers that under

no circumstances would they be permitted to advance farther, at least until cold weather should come to eliminate the danger of Texas fever.

This was bitter news to men who for three months had endured every privation and hardship, who had overcome what seemed well-nigh insurmountable obstacles, and at last reached a point where the worst was clearly over if only they might be permitted to proceed. Nor was such news made sweeter by the fact that it came from the lips of their late victorious antagonists, the "nigger loving Yankee Abolitionists" of the North.

The question was complicated by the mysterious and subtle nature of the disease which the Kansans professed to fear,—Texas fever. We know now that it is a malady to which southern cattle are entirely immune but which they carry to northern cattle by means of the fever ticks which drop from their bodies and attach themselves to other animals.

The Texans declared that their cattle were perfectly healthy and that it was absurd to suppose that they transmitted disease to others. The Kansans insisted that, absurd or not, when Texas cattle passed near, their own animals sickened and died, and they must assume that these southern cattle brought disease, though they were forced to admit that they did not understand just how or why.

Yet numerous theories were evolved and explanations given. It was asserted by some that a shrub in Texas wounded the feet of cattle making sores from which pus exuded to poison the grass and bring disease to northern animals. Others believed that the breath of Texas cattle upon the grass left there germs of disease. A few hinted that ticks might have something to do with the mystery but most people ridiculed the idea.

However, the Kansas settlers did not concern themselves much with theories. It was enough that their cattle had died in the past. It might be a visitation of God or the devil as a punishment for evil companionship. Certainly they had no more desire that their cattle associate with Texas Longhorns than they themselves had to associate with Texas cowpunchers.

Whatever sympathy we may have for the Texas drovers in

their difficult situation, there is nevertheless much to be said for the attitude of the Kansas settlers. Most of them were very poor. Some had endured the hardships of life on a prairie claim for years, others had but recently settled their homesteads and were striving to maintain themselves in a new frontier region. Most families had but two or three milk cows, and the milk and butter supplied by these were the chief items in the daily bill of fare. If their cattle died it meant that little children must go hungry or at least suffer from lack of proper food. The armed settlers met the first herds at the border with a fixed determination that they must be stopped at all hazards. With no less vehemence than was later shown by the French under far different circumstances they voiced the declaration: "They shall not pass."

The Texans had equal determination but infinitely less hope of success. They were few in numbers, broken up into small groups, and far from home and the support of friends and kindred. Yet they were not men who could be easily stopped. They thought of their own wives and children for whom a profitable sale of these cattle meant better food and clothing and greater comfort. Strong and hardy by nature and training, they had been made even more so by the trying experiences of the past weeks, during which they had traveled so many weary miles in search of a market for their property. To turn back meant that all their toil and hardship had been in vain. Now that they were comparatively near their goal, they would not relinquish, without a struggle, the enterprise upon which they had embarked.

There were sharp conflicts in some instances, conflicts in which the Texans were fore-doomed to failure. Not a few of the drovers were assaulted and beaten and several were killed by Kansas farmers. The cattle were stampeded and driven back into the Indian country. Some few who insisted upon proceeding had their cattle shot down and killed. A writer in the *Prairie Farmer* of August 25, 1866, stated that small herds of Texas cattle had been killed to the last animal by Kansas farmers and that if the owners of such herds insisted upon advancing north, this was the only alternative. He declared that any man who drove

Texas cattle into Kansas in warm weather was considered by the border settlers of that state as no better than a horse thief.

Faced by overwhelming odds, some drovers gave up in despair, abandoned their herds, or sold them for anything that might be offered, and rode back to Texas. Others turned their cattle back into the Cherokee nation to await the coming of cold weather, but prairie fires destroyed much of the grass and it was found very difficult to hold a herd so long in the Indian Territory. A few men turned west through the Cherokee country, and, after driving in that direction until they had passed the western limits of settlement in Kansas, again turned north across that state and a corner of Nebraska to Iowa or, in some cases, to St. Joseph from which point the animals could be shipped to Chicago.

Some of these men apparently met with a degree of success, but the losses on the trail had been so heavy in most cases as to leave them but a small fraction of the number of animals with which they had left home, and these were usually so thin and weak as to be of little value. Of the 260,000 head of cattle driven north during the summer of 1866 very few ever reached a profitable market.

The Texas cattlemen were almost in despair. There can be little doubt that the returning drovers spread the tale of their mistreatment at the hands of the Kansas settlers until it was known in almost every ranch house and cow camp in the Lone Star State. As a result comparatively few herds were started north in the spring of 1867, and yet that year was to see the solution of the problem of a market for Texas cattle.

This was accomplished largely through the efforts of Joseph G. McCoy, a prominent cattle dealer of Illinois. McCoy was keenly alive to the profits that might be derived from the Texas cattle trade and in the summer of 1867 visited Kansas City. At this time the Kansas Pacific Railway was building westward up the valley of the Kaw and had been constructed as far as Salina, a point far to the west of all settlement. McCoy's plan was to establish a cattle depot, or shipping point, on this railway at some convenient place to the west of any settlements and then urge the Texans to drive their herds to this place and from there ship the animals to Kansas City.

Accordingly he made a journey up this line of railroad and eventually chose as the site of his cattle depot the station of Abilene in Dickinson county. Here he established a town and built great shipping pens and a hotel. He then sent a rider south with instructions to seek out all herds moving north through the Indian Territory and tell the drovers of the shipping facilities afforded by Abilene.

This the rider did, but by this time it was too late to increase the drive from Texas that year, so only the scattered herds already in motion were brought in. Even so, some 35,000 head of Texas cattle were brought to Abilene and shipped to market during that year. The news of the success of these drovers quickly reached Texas and in 1868 the number of cattle driven north increased to 75,000 head. In 1869 it rose to 350,000 head while by 1871 no less than 600,000 head of Texas cattle were driven north over the various trails leading from Texas to the cow towns of Kansas.

Abilene was only temporarily the cowboy capital. Within three or four years the homesteaders creeping slowly westward had reached it. McCoy sold out his interests in the town to others who sought to discriminate against the trail drivers and make the former shipping point a market for agricultural products.

The attempt was disastrous. Other lines of railroad were now extending westward through Kansas and new "cow towns" were established upon these, farther west and beyond all settlements. Abilene was virtually deserted and changed from a busy bustling place to a sleepy little village surrounded by a few homesteaders who for some years could sell very little and buy even less.

However, in the course of the transition of Abilene from a cattle market to an agricultural village there were fresh bickerings and misunderstandings between the Texas drovers on one hand and the claim holders, and the later owners of the town on the other.

The new cow towns were Wichita, Newton, Ellsworth, Junction City, Caldwell, and above all, Dodge City. In addition to these were others of minor importance. They were said to be the

wickedest towns in all America. To them flocked gamblers, saloon keepers, and the rough, lawless riff-raff of the underworld to meet and prey upon the equally rough and lawless Texas cowpunchers who arrived with their summer's wages in their pockets and a thirst accumulated day by day during three or four months travel along the hot and dusty trail.

Dodge City had at one time two grave yards, "Boot Hill" where were buried those men who had died with their boots on, and another on the opposite side of town for those who had died peacefully in bed. The latter cemetery was small and neglected but "Boot Hill" early had a large and constantly growing population. The first jail at Dodge City was a well fifteen feet deep into which drunks were lowered to remain until they were sober and ready to leave town.

The chief reason for the great prosperity of the Kansas cow towns was that they were half way points between the great breeding grounds of Texas and the feeding grounds of the northern territories. Within a few years after the close of the Civil War the ranch cattle industry began to spread rapidly over the Northern Plains. The great reduction of the buffalo herds due to the activities of the hide hunters, coupled with the removal of many plains tribes of Indians to reservations in Oklahoma and elsewhere, opened up vast new ranges in Colorado, Wyoming, Montana, and Dakota.

Many cattle were driven into all of these territories and ranches were established wherever there was abundant grass and water. As a result of the opening up of these new ranching areas the drive from Texas to Dodge City frequently was but the first part of a drive to these remote territories. Enterprising ranchmen from the Northwest came down to Dodge City to purchase cattle to stock their new ranges. To them the Texas trail drivers sold large numbers of young steers while the fat, mature animals were shipped by rail directly to Kansas City or Chicago for slaughter.

An enthusiasm for ranching amounting almost to a craze swept over the entire country. Prominent bankers, lawyers and statesmen invested money in the business. Young eastern men just out of college, of whom Theodore Roosevelt was a conspicuous

example, hastened west to give their personal attention to the ranch cattle industry. The shipments of beef and live cattle to England, Scotland, and the continent of Europe aroused the interest of people in these countries and not a few wealthy foreigners came over and established ranches on the Great Plains. Prominent among these were the Marquis of Mores, a French nobleman, and Baron Von Richthofen, grandfather of the noted German ace. Wealthy English and Scotch investors formed syndicates to finance ranching enterprises and the British Parliament sent a commission to this country to investigate and report upon the industry.

Texas, because of its warm climate and low altitude, remained the chief breeding ground while the Northern Plains with their cool bracing atmosphere and rich pasturage lands became the chief feeding grounds, and not a few men held ranges in both regions.

The enormous number of cattle driven north in the summer of 1871 broke down the market and many men suffered heavy losses. As a result the drive was lessened somewhat in the future though for the next fifteen years perhaps 300,000 to 500,000 head were driven north each summer.

The earliest drivers, who sought to break the way across the western part of Indian Territory and into Kansas far beyond all settlements, experienced some difficulty owing to their lack of knowledge of the route and the fact that there were no trails or well-known landmarks. Yet no trail boss ever turned back. He merely set the wagon each night with the tongue pointing to the north star and in the morning moved forward with a fixed determination to make his ten or twelve miles that day. In a very real sense he "hitched his wagon to a star" and kept his cattle close behind its rolling wheels.

It was not long, however, until well-defined trails grew up and the route became perfectly familiar. Trail driving was eventually reduced almost to a science. It was found by "trial and error" methods that about 2,500 head was the correct number for a herd. This number required a trail boss, nine cowboys, a horse wrangler, usually a boy fourteen to sixteen years old, and a cook

to drive the chuck wagon. Such a herd moved in a column about a mile in length. The trail boss usually rode ahead to survey the ground and search out watering places and good grazing grounds. Next, at the extreme forward tip of the moving column rode two men, one on either side, called the "point." This was the station of greatest responsibility since it was these two men who must determine the exact direction taken, or "point" the herd. It was here too that a stampede always started. A third of a mile back, where the moving column began to bend in case of a change of course, rode two men, one on either side, at "swing." A third of a mile still farther back rode two men at "flank," while in the rear three men brought up the "drag." The horse wrangler accompanied his "remuda" or saddle band of five or six horses for each man, while the chuck wagon usually followed the herd in the morning and preceded it in the afternoon.

Such a herd usually traveled ten to twelve miles a day and could be driven from central Texas to the Canadian border at a total cost of less than a dollar a head, while to ship cattle such a distance by rail at the present time would cost from five to ten times that much.

Indians of the Kiowa-Comanche and Cheyenne-Arapaho reservations in Oklahoma sometimes visited the herds and asked for beef but seldom caused serious trouble. However, the Kansas farmers were slowly but steadily pushing westward. Drovers crossing the line into that state often found a scattering population of homesteaders in a region which the summer before had been entirely without any sign of human habitation. These protested loudly against the advance of the herd, complained of the dangers of Texas fever, and demanded damages for crops injured or destroyed by the cattle. The land-hungry Kansans were advancing toward the setting sun and nothing could stop their progress.

Moved by the growing scarcity of range at home some of the Texans drove herds into western Kansas and established ranches there, trusting that the great Goddess of Drought would make their tenure of these lands permanent. It was not to be. Within a few years the pioneer settlers began to come among them, build

little sod houses, break fields and sow wheat. Bitter quarrels followed. The homesteaders did not fear disease from the cattle that had been wintered in this region, but they did fear and dislike the owners of these animals. Cattlemen were wicked and unprofitable citizens of an agricultural community—particularly Texas cattlemen. They would never build schools and churches, increase the price of lands, and develop the country. Away with them!

All Texans believed implicitly in the doctrine of "free grass," that is that fields should be fenced and livestock permitted to run at large. The Kansas farmers believed equally strongly in the "herd law," or that livestock should be inclosed and fields left unfenced. Under the Kansas law this question was left for each county to determine for itself. Eight or ten ranchmen might locate in a county with a million dollars worth of cattle, but the influx of fifty families of homesteaders with property aggregating in value not over twenty-five thousand dollars spelled their ruin. The new comers homesteaded less than two per cent of the land of the county, promptly voted a herd law, and the ranchmen were forced to remove. They went, suffering great financial loss, and with renewed bitterness in their hearts toward the "Kansas Jayhawkers."

In the meantime the fears of the Kansas farmers with regard to fever had been carried to the legislature of that state. Stringent quarantine regulations were enacted against Texas cattle, culminating in the middle eighties with a law prohibiting the bringing of southern cattle into Kansas under any circumstances. This was soon declared to be unconstitutional but a law was passed forbidding the bringing of Texas cattle into Kansas at any time except throughout the winter months, a season at which it is entirely impossible to move cattle any considerable distance on the trail. The cow towns died instantly, while the Texans swore bitterly and swung their drive far to the west through Colorado, whose quarantine laws were more moderate. Yet some settlers began to occupy the prairies of that state also. In desperation the Texas ranchmen sought relief from Congress and endeavored to have a long strip of the public domain extending from Texas

to the Canadian border set aside as a national cattle trail, but their efforts in that direction failed.

In the frightful winter of 1886-7 cattle on the Northern Plains died by tens of thousands. Many, if not most of the largest operators in that region, were ruined. The severe winter was followed by a period of low prices and the enthusiasm of the country at large with respect to ranching began to cool. The great drives grew less and less in volume. The length of the drive west through Colorado, the presence of settlers, the fact that the Northern Plains were now fully stocked, and the surplus of cattle in Texas greatly reduced, all served to lessen the number of the cattle sent up the trail each year.

Moreover, trail driving was no longer necessary. Before 1880 the Missouri, Kansas, and Texas railway had been completed south from St. Louis to Fort Worth, thus affording a direct line from North Central Texas to market. Seven or eight years later the Santa Fe was completed from Kansas City to Fort Worth, thus giving easy access to the Kansas City markets. Before this time the cause of Texas fever had been discovered and measures taken to prevent the spread of the disease and looking toward the ultimate eradication of the fever tick. Quarantine yards were built at all principal markets to which southern cattle intended for slaughter might be shipped and kept entirely separate from others to which they might transmit disease. Also a system of dipping was inaugurated by means of which southern cattle could be cleansed of the dread parasite and so rendered safe from carrying infection.

The drives grew less and less and by the middle nineties had virtually ceased altogether. Texas cowpuncher and Kansas farmer no longer came together at the border or in the cow towns to impugn one another's motives and ancestry in language far more picturesque and forceful than it was elegant. Each settled back to his own work within his own state free from worry and interference by the other. Yet the years of conflict had done their work. A feud had been created that half a century has not entirely eliminated. Each told his children of the experiences of earlier days and so kept alive the smoldering spark of disfavor and distrust.

Bill Jones and the thousands of his kind who once moved the vast herds of long-horned cattle northward over the dusty trails are with few exceptions no more. "Gone with the things of yesteryear," they have passed, to quote their own language, "up the dim, narrow trail to that new range which never fails, and where quarantine regulations do not exist." Any reasons, or fancied reasons, for hostility between Texas and Kansas have gone with them. Gone it is true, but unfortunately not yet quite forgotten.

It has been thirty years since the author of this article called the Lone Star State home, and more than twenty-five years since he has had any financial interest in the ranch cattle business. But once a Texan always a Texan, and once a cowpuncher, always a cowpuncher. The curving legs warped by long years of days and nights in the saddle will straighten themselves sooner than will the curved mind warped during that same period of time. The impressions and prejudices of youth are strong and, like Banquo's ghost, "will not down." So with all respect to my many dear friends of the Sunflower State, I yet feel that there is an element of truth in the words of old Bill Jones:

"The fu'ther up in Kansas you go, th' more dam p'tickler they git."

JARED ELIOT, MINISTER, PHYSICIAN, FARMER

BY RODNEY H. TRUE¹

Perhaps no one could be mentioned who may be regarded as more truly representative of New England, and especially of Connecticut, in the eighteenth century than Jared Eliot. Since in his time and place he was to an unusual degree "part of all that he had met," the writer has sought through a study of his life not only to get light on an interesting and significant personage but also to gain concrete information concerning the times in which he lived.

His grandfather, John Eliot of Roxbury, Massachusetts, the

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Apostle to the Indians, who translated the scriptures into the language of the Natick tribe, is one of the striking figures of his day. His prominence in missionary work gave to the name of Eliot an assured standing in the New England theocracy. This standing was not weakened by the fact that Jared's father, Joseph Eliot, was a graduate of Harvard College in the class of 1658, and for the rest of his life minister to the church at Guilford, Connecticut, whither he removed as a young man. It was said of him by the Reverend Thomas Ruggles that his "great abilities, as a divine, a politician, and a physician, were justly admired, not only among his own people; but also throughout the colony where his praises are in the churches to this day."²

Jared's mother, Joseph Eliot's second wife, was well connected, being Mary Wyllys, the daughter of the Honorable Samuel Wyllys of Hartford. Jared, the oldest son, born on November 7, 1685, was one of eight children and was still in his childhood at the time of his father's early death, a circumstance which doubtless handicapped him in his early years. Through the care of kind friends this handicap was in part overcome and the youth was able to obtain a liberal education in "an academical course of studies" in the nearby town of Killingworth.³ The school at which he followed this "academical course" was none other than Yale College in its very beginning.

The Congregational churches of Connecticut Colony, determined that their clergy should receive a good and proper education, decided in 1698 to unite in founding a school of the church based on the plan of the protestant colleges and universities of France.⁴ The preservation of orthodoxy was to be the corner

² The title page of the printed sermon given at Jared Eliot's funeral reads: The Death of great, good and useful Men lamented. . . . Preached Apr. 24, 1763 Upon the Lamented Death of the Great and Venerable Dr. Jared Eliot, By Thomas Ruggles, V.D.M. Pastor of the Church of the first Society in Guilford, New Haven. Printed by G. J. Parker and Company, 1763. The above quotation is from page 15 of the printed sermon. Henceforth, it will be referred to as the *Funeral Sermon*.

³ *Funeral Sermon*, 16.

⁴ Thomas Clap, *The Annals or History of Yale-College, in New-Haven, in the Colony of Connecticut, from the first Founding thereof, in the year 1700, to the year 1766* (New Haven, 1766), 2.

stone of its purpose and policy. One of the board of trustees was the Reverend Abraham Pierson of Killingworth, the first president of the young institution, which was established formally at a meeting held in New Haven in 1700. The manner of the founding by the eleven ministers present is full of the spirit of the times. "Each Member brought a Number of Books and presented them to the Body; and laying them on the Table, said these Words, or to this Effect: I give these Books for the founding of a College in this Colony." A Librarian, the first officer, was immediately chosen to take in keeping the 40 folio volumes presented.⁵

In 1701 rules for the College were made. Abraham Pierson was chosen rector, and daily religious exercises were provided for "according to the laudable Order and Usage of *Harvard College*." Until a permanent home for the college could be settled upon, it was provided that the rector should give instruction in his house. Accordingly school opened in 1701, in the parsonage at Killingworth.⁶ Since the distance that separated Jared at his Guilford home from the new seat of learning was less than ten miles as the crow flies, there was no long journey to college. Here, Thomas Ruggles says, "he was truly a good scholar and well acquainted with the principles of true philosophy, which laid the foundation of his vast compass of knowledge, and shining improvements."⁷ He graduated with the class of 1706, a favorite pupil of Rector Pierson.⁸

Jared immediately returned to Guilford where he accepted the important position of schoolmaster, a post which he seems to have held for one year.⁹ The Reverend Samuel Johnson, later first president of King's College, New York, was one of his pupils.¹⁰ Rector Pierson, dying in April, 1707, earnestly advised his parish-

⁵ Clap, 10.

⁶ Clap, 11.

⁷ *Funeral Sermon*, 16.

⁸ Franklin B. Dexter, *Biographical Sketches of the Graduates of Yale College, with Annals of the College History, 1701-1815* (New Haven, 1885-1912). I (1701-1745), 52.

⁹ Dexter, I, 52.

¹⁰ Thomas B. Chandler, *Life of Samuel Johnson, D.D., First President of King's College in New York* (London, 1824), 3.

ioners to procure his favorite pupil to be his successor as pastor of the church. "Accordingly, in June, following Mr. Pierson's death, a call was extended to Mr. Eliot; but he doubted his ability to fulfill so great a trust." However, he "entered and engaged in the ministerial office in the church of Killingworth, June the 1st, 1707," although he was not released from his engagement in Guilford until September 16, 1707.¹¹ In entering the ministry Jared fulfilled a provision in his father's will "that one or both of his sons should be trained up to learning, to be preachers."¹²

There is no reason to doubt the genuine humility of the young man in face of a congregation already known to him in his student days. He must have been somewhat reassured, however, by the action of the town meeting when next year on November 25, 1708, a new evidence of confidence was voted in these terms: "The Town do agree to give to Mr. Jared Eliot when he the said Jared Eliot, shall marry, or have a family, sixty loads of good fire wood a year."¹³ Perhaps this certainty of a warm house may have helped him to decide to be ordained in October of the following year. His ordination, however, does not seem to have brought him over from Guilford, something much wanted in Killingworth. Again records of the town meeting speak and incidentally indicate vividly the close relation between church and town organizations.

"At a Town Meeting held in Killingworth, September ye 26; 1709, the Town did by their vote conclude to Indever that Mr. Jared Eliot be setteld a monst us in office (or ordayne) on ye Last Wednesday of October next insueing.

"Also the Town do agree that the Charge of the Ordination of Mr. Eliot shall be borene or paid by a Rate Levied upon the Estates of ye Subscribers to the Covenant of the Town, allwaye provided yt any other person is not bared from doing what they shall see cause. . . ."¹⁴

Thus, in course of time Jared Eliot became the third pastor of the church at Killingworth, a position which he filled during the remainder of his life. Once well installed he accepted the offer of the town and qualified for receiving sixty loads of good fire

¹¹ Dexter, I, 53.

¹² Dexter, I, 52.

¹³ *Two Hundredth Anniversary of the Clinton Congregational Church, held in Clinton, Conn., . . . (New Haven, 1868)*, 22.

¹⁴ *Two Hundredth Anniversary*, 22.

wood for the coming winter by marrying Hannah (some authorities say Elizabeth) Smithson, the daughter of Samuel Smithson from Brayfield, England.¹⁵

The coming into this neighborhood of the English emigrant, Samuel Smithson, brought other consequences to Jared and to the young college. Mr. Smithson brought the English prayer book into a community in which it was regarded with suspicion and even with aversion. The Colony of Connecticut belonged emphatically to the dissenters,¹⁶ a group of about thirty families in Stratford being the single conspicuous stronghold of the Anglican church. A Mr. Pigot, who had been sent to Stratford to minister to this group, came in contact with Samuel Johnson, Eliot's former Guilford pupil, in the month of June, 1722. Johnson invited Pigot to visit the college, then seated at New Haven.¹⁷

Meanwhile a new college rector, in the person of the Reverend Timothy Cutler, formerly minister at Stratford, had been installed at Yale. Possibly this visit to Yale may have resulted from the new Rector's earlier acquaintance at Stratford with Mr. Pigot. At all events, Pigot came to Yale and Samuel Johnson introduced him to his friends, among whom was his old teacher, Jared Eliot. The Dissenting ministers gave utterance to expressions of charity and veneration for the Church of England and Johnson and Pigot were delighted. Other meetings followed which bore fruit but which meanwhile aroused much suspicion and some alarm. Commencement took place on September 12, and on the following day the trustees summoned seven of those who were regarded as responsible for the "dark apprehensions."¹⁸ Among these were Rector Cutler and Jared Eliot. The inquisition held by the trustees developed a strong expression of opinion on the part of several that the ordination of the dissenting Presbyterians and Congregationalists was not valid, while with others, Eliot among the number, its validity was merely doubted, not denied. All were asked to state their position in writing and

¹⁵ Dexter, I, 53.

¹⁶ Chandler, 20.

¹⁷ Chandler, 26.

¹⁸ Chandler, 26.

the meeting broke up with sorrow and consternation in many a Puritan heart. Obviously matters could not rest here, and on October 16, at the time of the meeting of the General Assembly, the whole subject was fought out. Governor Saltonstall held the lists while each side urged its position. When the discussion became too hot the meeting was dismissed.¹⁹ As a final result the out-and-outers of the college, Rector Cutler and Tutor Browne, were dismissed and a test of orthodoxy was prescribed for succeeding teachers to accept.²⁰ Johnson eventually received ordination from the Church of England and later became the first president of King's College, now Columbia University. The doubters, one of whom was Eliot, seem to have been reconvincing of the soundness of dissenting doctrine and were not further disturbed by the claims of the Apostolic Succession.²¹ This outbreak at Yale was a part of a movement reaching to Boston²² and even to New York.

That confidence in Eliot's orthodoxy was not seriously shaken in the colony is evidenced by the fact that he was the first Yale graduate to be named a trustee, a position which he held from 1730 until his death.²³ There is reason to believe, however, that Eliot did not lose his sympathetic attitude toward the English church. He wrote to Ezra Stiles in his later days: "I have reason to think and speak well of moderation, it having procured for me the favour, friendship and good offices of Persons of worth in all denominations."²⁴ It was probably through him that Bishop Berkeley, who was sent to America in 1732 to found an Episcopal college,²⁵ turned his substantial patronage toward Yale. Berkeley gave rich presents in the form of books, and in 1732 the deed of a farm which Eliot had purchased for him near Newport, R. I.

It is pleasant to know that in times when theological dispute

¹⁹ Chandler, 26.

²⁰ Clap, 31.

²¹ Dexter, I, 53.

²² Chandler, 35.

²³ Clap, 91.

²⁴ Manuscript letter, dated Killingworth, Sept. 7, 1759, in the Stiles Correspondence in the Yale University Library.

²⁵ Clap, 37.

became bitter, Jared Eliot was able to keep a sympathetic working relation with all parties and to do so with peace of mind.

It would be interesting if time permitted to trace the intimate relation of Eliot to his Alma Mater during his trusteeship, but a single suggestion must suffice. In his will, made in 1761, two years before his death, occurs this item: "I will and bequeath to the President and Fellows of Yale College, in New Haven, ten pounds lawful money, the interest of which sum shall be applied to the use of the Library, in buying books from time to time, according to their best skill."²⁶ This was the beginning of the library fund.²⁷

In the somewhat primitive society of the Connecticut Colony in the early half of the eighteenth century we are not surprised to learn that specialization of effort was at times strikingly lacking. As Bidwell has pointed out,²⁸ practically all were farmers although they might also be millers, tanners, tavern keepers, fishermen, or merchants. The parsons at least had their gardens and less often farms as well. It is hardly surprising in a country where institutions of higher learning were few and attendance was small that a combination of the learned professions in single individuals became necessary.

It seems natural that the medical and ministerial professions should be thus combined. The minister being usually less bound to the routine of farming operations found opportunity to minister at call to those sick in body as well as in soul. There arose early in New England a recognized group of "clerical physicians."²⁹ Thacher says that following John Winthrop, the first governor of Connecticut Colony, who was likewise an eminent physician, Jared Eliot was the next physician of distinction in the colony. It will be recalled that Jared's father was also a clerical physician

²⁶ William H. Eliot, Jr., *Genealogy of the Eliot Family* (New Haven, 1854), 158.

²⁷ Dexter, I, 54.

²⁸ Percy Wells Bidwell, "Rural Economy in New England at the Beginning of the Nineteenth Century," *Transactions of the Connecticut Academy of Arts and Sciences*, XX (1916), 254.

²⁹ William H. Welch, *Record of the Celebration of the Two Hundredth Anniversary of the Founding of Yale College* (New Haven, 1902), 207; James Thacher, *American Medical Biography* (Boston, 1828), I, 263.

but owing to his death while his son was young, Jared could have had little help from him in this respect. Eliot's close friend in later life, President Ezra Stiles³⁰ of Yale College, is the authority for the statement that the Reverend Joshua Hobart of Boston and later of Southold, Long Island, imparted his medical knowledge to Eliot. Since Hobart died in 1716 or 1717, about ten years after Eliot graduated from Yale College and but seven or eight years after he was ordained minister at Killingworth, it is clear that Eliot's first studies in medicine began before he was thirty years of age. This tallies well with Eliot's own statement in the introduction to his first *Essay upon Field Husbandry*, in 1747, that "Having spent more than Thirty Years in a Business that required a great deal of Travel" he turned his attention to other things. Since his meeting house was but five miles from another on the east and but seven miles from Seward's to the north and not over ten miles from Saybrook down the Sound, according to one of Ezra Stiles' maps scratched on a letter from Eliot, dated August 21, 1761, now in the Yale Library, it is evident that his parish was small and that pastoral duties could not have kept him so steadily in the saddle. It seems clear that less than ten years after his ordination Eliot must have been already engaged in the practice of medicine.

It may seem strange that he should have received his medical instruction from Dr. Hobart, then resident on Long Island. However, it must be borne in mind that the shore of Long Island is within sight from the main land, the actual distance separating Killingworth from Southold being not over fifteen miles.

We are now obliged to pass rapidly over the succeeding thirty years of the life of our clerical physician. In the prime of young manhood he preached on the Sabbath to the well, usually from his own pulpit, and ministered to sick minds and bodies over a far wider range. As a tribute to his uniform good health and faithfulness to the duties of the pulpit it is said that in forty years he never failed to preach either to his own or to some other con-

³⁰ F. B. Dexter, ed., *Extracts from the Itineraries and Other Miscellanies of Ezra Stiles, D.D., LL.D., 1755-1794, with a Selection from His Correspondence* (New Haven, 1906), I, 364.

gregation. As to his abilities as a physician, there remains much testimony. Thacher, one of the most eminent authorities, says:

"he was unquestionably the first physician of his day in Connecticut, and was the last clerical physician of eminence, probably, in New England. He was very eminent for his judgment and skill in the management of chronic complaints. In these he appears to have been more extensively consulted than any other physician in New England, frequently visiting every county in Connecticut and being often called to Boston and Newport."³¹

Indeed, Dr. W. H. Welch, in speaking on the Two Hundredth Anniversary of the founding of Yale College says,

"It is customary to speak of Jared Eliot as 'the father of regular medical practice in Connecticut,' and when one considers the number of physicians who were trained under him, and that among these were such leaders of the profession and successful teachers of medicine as his son-in-law and successor in practice, Benjamin Gale, and Dr. Jared Potter, the title seems justly conferred."³²

Perhaps his influence may have contributed much to the use of less violent treatment than was customary, a circumstance which may have accounted for the unusual success attained by physicians of Connecticut in that early day with smallpox vaccination.

Through his pupil, Dr. Ayres of Newport, Eliot's fame was carried to New Jersey, where in 1766 a copy of a celebrated prescription of his was communicated and carefully discussed. It consisted essentially of a paste made of powdered gentian and curcuma roots, powdered glass, gum myrrh, and rose conserve, and was administered especially in cases of dropsy, a complaint in the treatment of which Eliot was quite celebrated. After full consideration the New Jersey doctors rendered their verdict in these terms: "The Society taking the above medicine into consideration, were greatly surprised at the accounts, but judged it not prudent to recommend the use of it without more authentic proof of its success."³³

Eliot seems to have corresponded on medical as well as on

³¹ Thacher, 263.

³² Welch, 203.

³³ G. W. Russell *Proceedings of the Connecticut Medical Society, 1899, 100th Annual Convention* (Hartford, —), 129-134.

other matters with his Quaker friend, Peter Collinson, a wealthy cloth merchant of London, who took great interest in all matters pertaining to science. In those days of few newspapers, Collinson's letters answered the purpose for the English-reading scientists of his time. Through him John Bartram in America was kept to a degree in touch with the doings of Linnaeus, the great botanist of Sweden, and Dr. John Mitchell's doings in London were pretty well known through this letter-writing mutual friend. Being himself no mean figure in the London scientific world, Collinson was one of the main channels through which the Royal Society and other learned organizations of the mother country maintained connection with colonials. Hence to be a correspondent of Peter Collinson was equal to acknowledged leadership among the colonists. We are therefore not surprised to find in the Yale College library several letters from Collinson to Eliot.

One of these letters, unpublished I believe, dated London, March 1, 1754, deals with a remarkable case reported by Eliot. Collinson's great interest in a prior letter from Eliot, unfortunately not in the collection, is indicated by the way in which he plunges into his subject.

"In the first place I must beg the favour of a more particular account of that surprising disorder that attended the Man, Woman & Child in breeding animalculas, that come through the Pores of the Skin[.] what is singular, that 3 persons should have it—it seeming to be catching like the Itch—if the Surgeon, Apothecary or Doct^r or perhaps all 3 center in one Ingeneous Man if he will be so Good as to Draw up the case—with the Symptoms attending the parties; before the animal^c appeared—& whilst under Cure & when they went off—& pray send those you have in the box—but if they was putt in a little Vial of Rum—they would keep plumper & better—pray Lett the account be Signed by the Doctor,—the Minister & Church wardens for it is a very Extraordinary Case & requires to be Well attested, the Physitians belonging to the Royal Society & Others will be extremely obliged to you for this wonderful Disorder & Method of Cure."

There is a peculiarly Collinsonian touch in this request preferred by an English Quaker to the foremost "Physitian" in New England urging him to authenticate his report by the signatures of church wardens, a species almost as rare in Connecticut Colony as in Collinson's own meeting house in London.

Another letter from Collinson to Eliot, likewise at Yale, written

in 1759, on the properties of cherry leaves, poisonous although still used as a valuable remedy, was called forth by some remarks of Eliot on the Black Cherry of America. Collinson proceeds to point out the dangers of the cherry, yew, and other plants to cattle that may browse on them. He also notes the loss to the owners of cherry orchards in England due to the discovery of the poisonous properties of the leaves followed by the striking out of this article from the Dispensatory. This letter seems to have been transmitted to Eliot by Alexander Colden, son of Cadwalader Colden, the governor of the province of New York, a friend of Eliot and Franklin, and, like them, interested in electricity, lightning, ocean currents, and similar "philosophical" subjects.

We are then to imagine Eliot's middle life to have been filled for a part of the week with his duties as physician and as trustee, and one of the mainstays of the young college. On Sunday he was to be found in his pulpit. He was himself a pioneer living in a rather thinly settled country and he felt a certain obligation to relieve distress in a land in which physicians were much scarcer than ministers. As he reached his three score years conditions changed. Thomas Ruggles says "After he had instructed many, and physicians became more numerous, he left off the practice of riding out of town, and applied himself more immediately to the charge of the flock committed to his care."³⁴ We know the names of several of his pupils and through them can trace the broadening influence of his teachings.

During the thirty years of riding about New England, he had "an opportunity to see much of the Country, of making many Observations, and of being acquainted with many persons of Worth and Ingenuity, both Farmers and Others."³⁵ After "One Years Leasure" Eliot embarked on a new enterprise, medicine in a measure being exchanged for agriculture. While riding on his professional errands his mind seems to have been busy with the problems of the farmers in the different sections visited. A comparison of different methods he had seen in use, and the lack of definite knowledge about important things occupied

³⁴ *Funeral Sermon*, 153.

³⁵ *Essays*, Preface.

alike his keen faculties of observation and his alert reasoning powers. A man so fully alive to what was going on about him among his fellow men, and in the affairs of nature, could not but feel a desire to take a hand in the great game the farmer is ever playing. "Yet all this while," Eliot says, "I was in a great measure prevented [by the necessity of travelling] from making Trials and Experiments of those things which occurred to my mind."³⁶ So he sets himself down to the task of scientific farming, and to the even more serious one of communicating the results of his experiments and trials to fellow farmers. He points out that the books written for the instruction of farmers in England are in many respects of little avail in America. "Having read all on that subject I could obtain; yet such is the difference of climate and method of management between them and us, arising from Causes that must make them always differ, so that those Books are not very Useful to us."³⁷ Short though we should be inclined to regard the time that had separated colony and mother country, "the Terms of Art made use of are so unknown to us, that a great deal they Write is quite unintelligible to the generality of New England Readers."

Eliot thinks "For these Reasons Books of Husbandry calculated to the State and Circumstances of the Country may be of great service; not an History of our Practice, nor an Account of what we do in our present Husbandry, but rather what we might do, to our Advantage." To write such a work becomes Eliot's purpose. The objection that "It may be thought that a Subject of this Nature is not very suitable for one of my Calling" is well answered. "Certainly the Cultivation of the Earth affords the most useful Philosophy, opens to us a glorious scene and discovery of the Wisdom and Power of the Creator and Governor of the World. It is what has employed Men of all Rank and Orders from the Prince to the Peasant." He then turns to the comparative neglect of Agriculture by investigators of all sorts.

³⁶ *Essays*, Preface.

³⁷ *Essays*, Preface.

"It is acknowledged by our best Writers, that while other parts of Learning less useful, have been cultivated, Agriculture or Husbandry, has been strangely Neglected. Some suppose the Reason of this Neglect is, that the Subject is too low for Polite Writers. . . . I rather think Husbandry has been Neglected as being too high; That is, Writers do not care to be at the trouble of Projecting, nor at the charge of Trials and Experiments upon which hath been Projected: It being a good deal easier to write a Book upon the known Arts and Sciences that shall be accepted and applauded, than to write upon Husbandry so as not to be despised;"³⁸

Eliot, at the age of 62 with these apologies and with the request for help, undertook his new work. His farms become experiment stations on which all manner of plans for land and crop improvement are "projected" by the Reverend Director. By 1747 he has enough to set him to writing and in the following year he issues the first numbers of the first agricultural periodical printed in America.³⁹ It was filled with a variety of shrewd observations on his own experiments and on the agriculture of others, from the ancient Hebrews and Virgil to the latest work of Tull and Maxwell. He fills thus most of the space himself but asks for contributions. With real modesty and with a great gladness "to do good as far as lies in my power" Eliot steps to the front and near the close of his first essay proposes his plan.

"It may serve to increase *useful knowledge*, if something of this Nature were published every year, giving a faithful Account of the Success of all the Experiments and Trials that may be made on various sorts of Land, and of divers Sorts of Grains, Roots, Grass and Fruits, not only such as we have in Use, as also what we have not as yet introduced among us.

"There are few Men of Business, Ingenuity and Observation but what have found out Things valuable and useful, but for Want of some proper Method to communicate them, they die with the Discoveries, and are lost to mankind.

"Therefore whoever has made any observations or Discoveries, altho' it be but a Hint, and looks like a small Matter, yet if pursued and improved, may be of publick Service. If they see Cause to favour me with such Discoveries and Experiments as they have or shall Make, I shall receive them with Thankfulness, and publish it either with or without their Name to it, as they shall see fit: For if

³⁸ *Essays*, Preface.

³⁹ The title page of the copy in the Yale University Library reads: An Essay upon FIELD-HUSBANDRY in NEW-ENGLAND As it is or *may be* Ordered. By Jared Eliot, M.A. Eccles. v.9. Moreover, the profit of the Earth, is for all, the King himself is served by the Field. N. London. Printed and Sold by T. Green. 1748.

this Essay should be tho't useful, if God give Life and Health, I propose next Year to furnish you with another Winter's Evening Entertainment."⁴⁰

The importance of saving what has once been learned bore strongly on Eliot. After reviewing in his second essay the agricultural methods of ancient times he refers regretfully to the "Few Fragments left us of the old Rules and Art."⁴¹ He recalls several instances in which useful knowledge once possessed has come down to us solely in a record of results obtained, the methods of obtaining them having been lost. "Useful Arts are sometimes lost for want of being put into writing." "Tradition is a very slippery Tenure, and a slender Pin to bear any great Weight for a long Time."⁴² He gives in a word his relation to contributions accepted. "What hath been inserted in this Essay only upon hear-say, is not offered as certainly to be depended upon; but only as probable and worthy to be tryed."⁴³ By plain implication what is reported from well-known sources is to be given credit accordingly.

Perhaps the motto of his yearbook of experimental agriculture, as it might have been appropriately called, is given in the next sentence: "A Discovery of the Nature and Prosperity of Things applying them to useful Purposes, is *true Philosophy*:"⁴⁴ He follows this further.

"*Experimental Philosophy* being founded in Nature and Truth is obtained no way, but by Time and Diligence. The Knowledge of Things Useful was gained little by little. We do not admire or despise Things merely because they are new; but value Things or disregard them just as far as they are found (by *Experience* that faithful Instructor) to be useful or unprofitable."⁴⁵

The almost hard-headed practicality of the New Englander speaks out in many places in emphasis of the fact that the only sound

⁴⁰ Quotations from the *Essays* are taken from the collected edition published in 1760 at Boston by Edes and Gill, the copy from the Peter Force Collection in the Library of Congress at Washington having been used. For the quotations or references to the *Essays*, the number of the *essay* and the page are given in the footnotes. The above quotation is from I, 17.

⁴¹ I, 33.

⁴² I, 33.

⁴³ I, 20.

⁴⁴ I, 18.

⁴⁵ I, 18.

method of making agricultural progress is experience. "Our Reasonings and Speculations without Experience are delusory and uncertain. It used to be the Saying of an old Man, *That an Ounce of Experience is better than a Pound of Science.*"⁴⁶

The method of experiment being approved as the only safe one, Eliot applies an equally clearcut test of success. Unless an operation was *profitable* it was not commended. Perhaps the term *profit* occurs as frequently as the word *experience*, and the words *charges* and *chargeable* occur constantly as words of warning. On his first page he refers to the most expensive and chargeable methods of Cultivation tried by the colonists when fresh from England with only the Old World methods known to them. "They tho't themselves obliged to stubb all staddle, and cut down or lop all great Trees in which they expended much Cost and Time."⁴⁷ He even kept his publication small.

This periodical begun in 1748 as an annual was interrupted by sundry events. In 1750 and 1752 we find no essays, while between the fifth and sixth essays an interval of five years (1754-1759) elapsed.

In accounting for the delay of the fourth essay we find that he furnished copy "last April but the printer being employed in the Service of the Government, the Printing mine was necessarily postponed."⁴⁸ In this connection an interesting passage occurs in a letter from Franklin to Eliot, which is in the Yale Library—"Philad^a, May 3, 1735. . . . I received your Essay last Post, and my Presses being at present engag'd in some publick Work that will not admit of Delay, I have engag'd Mr. Parker to print it out of hand at New York. You may expect to see it done in two or three weeks."

Parker printed not only the fourth but also the remaining essays as they originally appeared.

There is a fairly well-defined plan to be traced in each essay. Generally a paragraph of an historical or general nature precedes the discussion of some subject which is dealt with in considerable

⁴⁶ I, 9.

⁴⁷ I, 1.

⁴⁸ IV, 72.

detail. After this the essay is broken up into brief paragraphs on the greatest variety of topics, frequently reporting items of information obtained in conversation or in correspondence with his friends and acquaintances. These notes are not rarely interspersed with editorial remarks sometimes on the policy pursued in the series, sometimes on reasons for omissions. A usual feature is a running comment on certain continuing experiments being carried on. Sometimes he reports the results others have found in seeking to repeat previously communicated experiments.

At the end of each essay the clergyman for a moment appears in a brief paragraph which seeks to lead the reader from the material aspect of things to some religious consideration summed up in a short scriptural quotation. The reader feels a certain curiosity to see how he will make the transition.

It would be a pleasure to bring out in some worthy way the contents of this noble series of papers but I shall content myself with reviewing in outline the first Essay and with indicating inadequately the chief themes of the other numbers.

The *First Essay* was written in 1747, at the close of King George's war. Eliot had already been in correspondence with John Bartram for six years or more, but was a relatively unknown man outside of New England. Jethro Tull had written his "Horse hoing Husbandry" sixteen years before. Arthur Young, the great English agricultural experimentalist, was then a six-year-old boy. Agriculture had already awakened in Ireland.

The American colonists had begun to feel the pinch of land impoverishment and of wood shortage. Since in the swamps, Eliot contended, were the richest lands if they could be made available, we are not surprised that the chief burden of the essay is drainage. The principles governing profitable drainage are indicated and a number of ingenious and useful ways of handling the problem were pointed out. Different types of bogs or marshes are distinguished and the prospect of successfully draining and utilizing each is indicated. He points out the value of flooding rather than draining of land under certain conditions of soil structure and relations of level.

The question of fit crops for these drained lands is next dealt

with. He tells of his experiments with red clover, English speargrass, herd grass, foul meadow and other grasses. He also tried turnips, the center of the Norfolk system of crop management at that time followed with conspicuous success in parts of England. Indian corn, flax and hemp are also discussed. He mentions tests with watermelons, seed of which he supposed to have come from Archangel. It was perhaps this mention of that Arctic port that led Weeden to think that Eliot was a great traveller. He asserts that "He travelled in Europe even as far as Russia." One finds doubts arising at the bare mention of Archangel as belonging to the watermelon belt. When we find Peter Collinson in a letter, now in the Yale University Library, correcting Eliot's geography we are forced to believe that Eliot did not bring these seeds from Europe but had gotten them from some other traveller, perhaps through Collinson himself. The Collinson manuscript says:

"I presume you mistook the name[,] there being some resemblance as instead of Archangel to be Astracan seated in a Warm Climate at the mouth of the Volga on the Caspian—for Every Year great numbers of Water Mellons are brough[t] from Astracan & Moscow & Even to Petersburg—but Archangel in the Latitude of—is too far North for such Southern Fruits."

I confess that nothing has come to my attention indicating that Eliot ever travelled beyond New England save when he crossed Long Island Sound.⁴⁹ It is pleasant to know that if Archangel

⁴⁹ As a further instance of Weeden's enthusiasm concerning Eliot's accomplishment may be cited his statement (W. B. Weeden, *Social and Economic History of New England 1620-1789*, II, 688. Boston, 1890.) that "clover-sowing for recuperation, just beginning in England, was introduced here by Eliot." My colleague, Professor Lyman Carrier, has called my attention to data pertinent to this point. Samuel Hartlib's *Legacie* (London, 1651) reprints a letter said to have been written by King James "to the Lords Lieutenants of the several Shires of England" published at "Yorke in 1649" in which "Great Clover" is mentioned among the crops introduced into England which have "been brought to perfection even in our days."

The introduction of red clover into America seems also to antedate the time assumed by Weeden. John Josselyn, in his *Account of Two Voyages to New England* (London, 1674), 188, states "Our English Clover-grass sown thrives very well." The anonymous author of *A Relation of Maryland* (London, 1635), reprinted in *Narratives of Early Maryland 1633-1684* (Clayton Colman Hall, ed., New York, 1910), lists among "Provisions for Husbandry," "Seede Wheate, Rie, Barley. . . Good store of Claver grasse seede to make good meadow."

was probably too far north for melons Connecticut was not. Eliot says, in the appendix to his second Essay, "I mentioned last Year my design to plant the Seeds of *Russia* Water Melons and Cotton, the first produced Melons remarkably good and large, weighing more than fifteen pounds."⁵⁰

He turned from the reclamation of swamps to the redemption of worn-out lands. He pointed out methods which are still standard remedies. The value of animal manures is of course recognized, but the limited supply then as now forced the farmer to look for additional means of relief. Eliot recommended red clover as a most important help. If the land be too poor for clover, the manure supply may be used to give it a start. He recommended the use of a calcareous sand that he found washed up on the beach at Guilford and planned a flat boat of twenty tons capacity to be used in bringing this sand to Killingworth. This he found equal to dung. The value of lime in other forms is recognized.

"The last sort of Dressing I shall take notice of, is Lime-Stone, which abounds in the back parts of the Country. I have not heard of any on the Sea-Coast, or on the land adjoining to Navigable Rivers for Twenty Miles back; for thus far the inhabitants may be supplies with *Shells* from the Sea; At about Twenty Miles end, more or less the Lime-stone begins and extends far and wide; which is an Evidence that the World is made and governed by a Kind Wise and Intelligent Being."⁵¹

This is certainly a sufficient recognition of the agricultural value of lime!

In this as in his other Essays Eliot is always returning to the value of red clover for land restoration as well as for forage. A sentence or two on clover may be worth quoting.

"I had often met with it, that our Nation being much Exhausted and Ruined by the Civil War, retrieved their great Losses by some new Husbandry, and in a little time, Recovered themselves and got to a better State than ever; but never could learn what was this advantageous Improvement, till I found by Reading Mr. Hurlib's *Book of Husbandry*, that it was principally by introducing this Clover Grass, called *Flanders Grass*; because the seed was bro't from Brabant and other parts of Flanders."⁵²

⁵⁰ II, 47.

⁵¹ II, 42.

⁵² II, 36.

Perhaps the earnestness of Eliot's conviction on the value of red clover is summed up in his second Essay when he says "I believe it will not be well with *New-England*, till every Farmer shall have a Bushel or two of Clover Seed to sow every Year upon his own Land."⁵³

After mentioning other means of bringing up exhausted lands, Eliot turns to the livestock situation with the assertion that "A better *Breed of Sheep* is what we want. The English breed of *Cots-wold sheep* cannot be obtained, or at least without Difficulty:" and he suggests the attitude already adopted by Parliament toward the Colonies in the Importation Act. These words of Eliot, a loyal colonist anxious to obtain Cotswold sheep for the benefit of his colony, must have come out of a regretful foreboding. "For Wool and live Sheep are contra-band Goods, which all Strangers are prohibited from carrying out, on Pain of having their right Hand cut off." He turns to the resources at hand and advises the breeding up of a true breed from the best they have.⁵⁴

At this point the essay passes over into the form of sundry notes of which a few may be mentioned to show the character and variety of the contents of this part of the periodical. The statement that there is a greater profit on a "Barrel of Cyder of Sweet Apples worth 3 Pounds when made into Mollasses" than on the same quantity made from common apples may throw light on the way the colonists met the prohibition of sugar and molasses from the West Indies.⁵⁵ A flour, made of "half a Peck of little round White Beans mix'd with a Bushel of Rye is said to make Bread something like Wheat," and suggests a shortage of wheat in 1747, something not strange in New England for many years to come.⁵⁶ Eliot has been told that wheat sowed with barley is not apt to blast, and do well together; also summer rye and oats. Also oats and peas sown together produce a good crop, the oats bearing up the pea vines from the ground.⁵⁷ The soaking of corn in

⁵³ II, 31.

⁵⁴ I, 14.

⁵⁵ I, 14.

⁵⁶ I, 14.

⁵⁷ I, 14.

water till the grain becomes very soft is urged as an economical way of securing the most complete digestion of the corn. He has it tried by an "honest judicious Neighbor" who reports that he saved one bushel in seven by the practice. Eliot, figuring on one bushel in ten, calculates that this would mean a saving of 24,000 bushels if adopted by the whole colony.⁵⁸ A mixture of Indian corn and oats well soaked is mentioned as a valuable means used by a jockey of the neighborhood for quickly fattening his horses.⁵⁹ A handful of dry ashes put upon each hill of corn is reported to be equal to an application of rotted manure applied in the hole in which the seed is planted. In the Appendix his Yankee ingenuity appears in a method by which a well on a hilltop may sometimes be turned into a hillside spring.

The *Second Essay* states that the trial number has met with an unexpectedly favorable reception, fifty copies "having been lately sent for by B. Franklin, Esq., of Philadelphia, a person of merit and learning."⁶⁰ Many others also encouraged him; letters coming from across the sea expressed the hope that he might continue. The main burden of this essay is the problem of how to increase food producton. He says the high prices given for hay and corn have led to the shipping from Connecticut of even inferior hay and remarks that this scarcity has been coming on for some years past. He concludes that the stock supply has outgrown the meadows, causing a hay shortage. This has made it necessary to feed corn to stock in winter in greater quantity than usual thus reducing in turn the supply of food for the family. They will endure some privation rather than give up the work oxen. Since all suffer shortage, the crops of the following year suffer because the oxen are not strong to labor. Scarcity of corn thus affects the colony more than wheat shortage. He argues that hay therefore is the key to the whole situation and advocates an increase in the meadow area as well as the use of all practicable additional forage crops. Alfalfa, clover and coleworts are favorably mentioned. Full use of all possible

⁵⁸ I, 15.

⁵⁹ I, 16.

⁶⁰ II, 21.

fertilizers, rags, horn shavings, hair, ashes, kelp and creek mud is recommended. The usual list of paragraphic notes follows.

The *Third Essay* deals primarily with diversification of crops. He indicates that the aggregate food production has been increased not only through the use of greater land areas but also by the greater variety of crops grown. He enters in detail into the uses of millet and emphasizes the same points that are now made in its favor. His great interest in grasses and other forage crops frequently appears as he discusses the good points he has found in lucerne (alfalfa) and Sanfoin. He mentions lime in connection with these legumes with singular and significant persistence.

The *Fourth Essay* contains the largest single contribution made to the periodical. It was sent by the writer, Richard Jackson, under cover of secrecy to Collinson in England who dispatched it to Franklin in Philadelphia. Franklin under date of December 10, 1751, wrote to Eliot from Philadelphia quoting Collinson's instructions to him. I quote from this Yale manuscript: "After J. Bartram has perused it I shall submit how it may be further disposed of only our Friend Elliot should see it soon; for Mr. Jackson admires his little Tracts of Husbandry as well as myself, and it may be of greater Service to him and his Colony, than to yours." Franklin added, "You may expect the papers in a Post or two. If you make any Use of them, you will take Care not to mention anything of the Author." Here then we have a first hand statement in our American periodical of the Norfolk system from Richard Jackson of Norfolk, who later served New England in the mother country and had close relations with Eliot.

The connection of Jackson with Eliot in a united effort to help the colony in England will be reserved for discussion elsewhere.

On resuming the floor after the presentation of Jackson's essay, Eliot commends this Norfolk method to the consideration of Weathersfield, Windsor, Hartford, and Springfield. He again emphasizes the importance of hay production and singles out clover, "St. Foin," and lucerne for special mention. The remainder of the essay is chiefly concerned with means of increasing fertility by the use of sea weed, leaves raked together by poor

children, slitch carted from swamps, and sea salt. He advances an idea strange sounding to our ears but in keeping with the chemical teachings of the time that since common salt of itself is not an aid to plant growth, it may be overcome and assimilated by "nitrous salt" of the earth and air and converted into a like substance.⁶¹ It is interesting that the term "nitrous" was so closely associated with the idea of fertility long before any real knowledge of nitrogen or of its function in plant economy could have been even dreamed of. After the usual series of short notes the editor lets his poetic enthusiasm command his pen for the closing pages on which we find a veritable rhapsody on the changes wrought in bogs by drainage and cultivation. This is one of the few places in which the restraint customary to the man and to the times yields to the freedom of enthusiasm.

The *Fifth Essay* is devoted primarily to the problem of tillage. The theories of Jethro Tull, first propounded in England twenty-three years before, are briefly and clearly stated with modifications growing out of the editor's own experience. He complains of the needlessly cumbersome and complicated apparatus devised by Tull and explains how with the help of President Clap of Yale College and of Benoni Hillyard, a very ingenious wheelwright of Killingworth, he has worked out a more simple and efficient machine. This drill, drawn by two oxen, opens the furrows, drops the seed and the fertilizer and covers them by a single operation. It was so made that it could be used to sow turnip seed as well as wheat.

It is interesting to see how this Americanized Tullian system was received. In Connecticut as in England soil deterioration was already a menace; the supply of manure was inadequate, and other fertilizers were not at hand. Tull's theory stated with convincing clearness that by dividing the particles of the soil to the utmost possible degree of fineness, the soil solution which clings to the particles of earth would become correspondingly available to the absorbing rootlets. At the same time the fertility of the soil would be increased by the condensation and

⁶¹ IV, 87.

absorption by the porous soil of the nitrous particles and moisture of the air. The air of limitless volume would thus supply the open, finely divided soil, which by reason of these properties would the more easily and completely yield up its gains to the plants, and machine tillage would secure a steady renovation of the soil. Thus Eliot brought the new agriculture to Connecticut and Americanized it as far as needful. Others adopted both his method and his drill. Eliot had a drill made and sent to William Logan who wished to try it on his farm near Philadelphia. In the interesting letters from Logan to Eliot, seen in the Yale collection of Eliot manuscripts, occur frequent references to this new method. In a letter dated "Stenton near Philadelphia, 7 Mth [July] 25, 1754," Logan writes:

"I have had the opportunitys of reading thy Several Essays on Husbandry, and altho' we have had many Authors that have wrote on the English Methods of Farming, Yet it does not altogether agree with our Climate, and I Can assure thee that It Gives me Great pleasure to See any Gentlemen taking the Pains in our American Parts thou Seems to do, & afterwards make Publick his Experiments for the Benefit of his Country men and Neighbours, and think the Farmers of Your Countrey are Greatly obliged to thee."

After further praise of the Essays and of the spirit that led to the time-consuming experiments underlying the statements made in them, Logan hopes that Eliot may find time to visit Pennsylvania and New Jersey where "Thou might make such Observations as would not Only be usefull, but Save thee phaps much time in gaining the Experience of."

He then asks Eliot to procure a drill for him, and describes the experience of a neighbor with Tull's system. He says he has procured from a New Jersey cousin, Charles Read of Burlington, "about a pint of the foul meadow Grass Seed," alluding apparently to a former distribution of this seed by Eliot. He closes with a remark that throws a little flash of light on the workings of the postal system of the time. "I have not time at present to Enlarge but as my Friend, Benj. Franklin tells me he will frank all my Letters, that they may Go Post free, I shall be pleased to hold a Correspondence with thee in this way, if it be agreeable."

The *Sixth* and last *Essay*, published after the fall of Fort Duquesne and Quebec, had been many years overdue.

"I designed to published an *Essay*, on this Subject, yearly; but, the War coming on, which naturally and necessarily engaged our Attention, both in the dark and bright Scenes of it, so as to leave but little Room for anything, but what is absolutely necessary, and especially so, as we are all military men, as well as Farmers, our Circumstances being like that of the old Romans, from the Plow to the War, and from the War to the Plow again: there having been so many of our labouring People draughted out yearly, ever since the Commencement of the War, no less than Five Thousand the last year, besides lesser Excursions, which takes off men from their husbandry Business; which together with heavy Charges consequent upon it, renders it neither safe nor prudent, to leave the old beaten Paths, for new Inventions, for, having neither Hands nor Money to spare for the Prosecution of any new Scheme, or untry'd Methods, I have given over writing; unless it be something that can be done in a little Time, and with a very small Expence, the advantage of which may be of long Continuance, and of great Benefit, such as planting of Fruit Trees and other useful Trees: As Trees are soon planted, but take a considerable Time before they come to Maturity, it may be very proper, even, altho' the War yet continue, to set ourselves about it with one application."

He then explains the effort of the Society for the Encouragement of Arts, Manufacturers, and Commerce of London to establish the silk making industry in Connecticut, by offering to pay a bounty on cocoons produced. "These Premiums will be paid under the direction of Rev. Mr. Thomas Clap and Dr. Jared Eliot, of Connecticut, on Condition that a public Filature be established in Connecticut, under Direction of the said Gentlemen, that each Person bring his or her Balls or Cocoons, to such publick Filature." He argues that the prevailing conditions are more favorable to this industry than to those requiring more active labor since the planting of mulberry trees may be begun and the work required will be largely such as can be rendered by non-combatants.

His energies seem now to have run strongly to this project of silk production. The physiological problems involved in stripping the mulberry trees of their leaves are subjects of thought and trial. Methods of propagation of both white and black sorts by layers, by cuttings, and by seeds are described. Since the family of a neighbor, Captain Meigs, has for some years been making for home use such silk as could be produced from worms grown on

leaves of two large trees it will be possible, he argues, to proceed with some degree of certainty. Since the trees planted form an ultimate limit to the possible industry, the setting of many trees is urged as an immediate step. He refers to the stronger position in which other colonies are placed by having staples for export. Carolina has rice and indigo, Virginia and Maryland have long found wealth in tobacco, New York has prospered through the fur trade, the Eastern Governments have the fisheries as profitable resources in time of peace, "more valuable than the richest Mines of Silver and Gold, when they shall quietly enjoy the best Fishing Ground in the known World."

"The People of this Colony have a Trade to the British Sugar Islands; a coasting, continent, plantation Trade, which is to the Increase of shipping, and is a nursery for Seamen: This Trade in a circular Course, and in the End, centers in Great-Britain, and is of some Advantage, yet, after all, something is wanting, by which we may have a direct Trade to England."⁶²

The silk industry seemed to him a promising basis for developing such a trade.

He points out the many uses to which mulberry trees and their products may be put. If planted in great numbers they will supply the needed fire wood,—a dear article when the hauling distance exceeds four or five miles. The trunks make good ship timbers; if properly treated, the trees may be forced to grow in hedge form and save the timber required for building fences; the fruits are valued in Italy as food for fattening swine and poultry, but Eliot thinks because of the high sugar content of the juice the white mulberries may be more usefully employed for making very good wine.

Apparently incidentally the silk industry tempts Eliot into a very interesting discussion of the problem of land tenure as seen in the diffusely populated colonies of the South with their huge plantations and large slave populations, contrasted with the small freeholds of the North involving concentrations of population, and intensive cultivation by the land owners themselves. He argues that a colony managed on the latter basis will be of

⁶² V, 134.

more use to the mother country, and, owing to the absence of bought servants and slaves who can not be relied upon in time of general danger, will be more closely united and able to take care effectively of itself and the common interest in the time of trouble.⁶³

It is now necessary to leave this phase of Eliot's activity. I think it may safely be said that he conducted a truly American periodical. That the Essays in point of time were the first agricultural production printed in America is hardly to be asserted. When body and quantity of material are considered, Eliot stands out as our first great American agricultural investigator and writer. That his influence became great from Philadelphia northward is abundantly shown by letters seen in the Yale collection to Eliot from Collinson and Richard Jackson in England, from Benjamin Franklin, John Bartram, and William Logan of Philadelphia, from Judge Peter Oliver of Middleborough, Massachusetts, from President Ezra Stiles of Yale College, and James Monk of Halifax.

Eliot's much riding served to give him a vast store of raw observational material on which he worked during the later less active years of his life. His work on husbandry was but one result, although the major one, drawn from this store.

At this time Connecticut greatly needed an adequate supply of iron. Bog ore had been found in many places, and a very disappointing grade of iron had been made. For the manufacture of tools, steel and iron imported from England, Germany, and Sweden were preferred. Hence it is not surprising that two items were actively sought, a sufficient source of "mountain ore" from which good iron could be made, and a reliable home source for fine steel.

Dr. Samuel Higley of Simsbury, and Joseph Dewey of Hebron, in 1728, had secured a ten-year monopoly for the Colony of the right to make steel, but their enterprise probably failed.⁶⁴ In 1744 Aaron Eliot, the oldest son of Jared, and Ichabod Miller succeeded where Higley and Dewey had failed, having made

⁶³ V, 138.

⁶⁴ William H. Eliot, *Genealogy of the Eliot Family* (New Haven, 1854), 160.

"more than half a ton of steel at the furnace at Simsbury." Aaron Eliot in his turn secured concessions from the Colony and was still making steel when the Revolutionary War broke out. The supply of iron from which the steel was made had often to be bought in New York, and owing to Aaron Eliot's lack of capital to procure by direct purchase a sufficient stock of iron he was obliged to send a large part of his steel to New York in payment. Connecticut was then obliged to buy back such steel as it needed at the New Yorker's price. Aaron states that he was obliged to turn in his steel at a value of £56 per ton and Connecticut was obliged to pay £75 and £80 to get it back. On the strength of this argument, the General Assembly advanced £500 to finance Aaron's industry in the hope of reducing the price of steel in Connecticut. The loan was due for payment to the Colony when the Revolution broke out.

In view of the conditions just described it is not surprising that adequate supplies of good iron were eagerly sought and that Jared Eliot at an early date took an interest in the matter.⁶⁵ In 1734 we find him one of a group of investors, consisting, besides himself, of the Reverend Elisha Williams, President of Yale College, the Honorable Robert Walker of Stratford, John Ashley of Westfield, Philip Livingston of Albany, and Ezekiel Ashley of Sheffield, securing an ore bed at Salisbury, Connecticut, by patent grant from the General Assembly.⁶⁶ In 1761 Eliot was also part owner of another ore bed in New Milford, Connecticut, where one of his sons was at that time in charge. It is probable that Aaron made a part of his iron supply from this ore bed.

The demand for steel still being greater than the iron supply, further sources were being sought when in 1761 Jared Eliot critically examined a deposit of blackish sand seen periodically on the beaches near Killingworth. A small quantity was carried in his saddle-bags to his son's iron works just erected near that village. Test showed that an excellent iron could be smelted

⁶⁵ The relations of Aaron Eliot to the colony are brought out in documents reprinted in Eliot's *Genealogy*, 160-162.

⁶⁶ Eliot, *Genealogy*, 160.

from this sand. Jared gives a most interesting account of this discovery in a last essay, published in 1762, only a year before his death. This account, sometimes referred to as the *Seventh Essay*,⁶⁷ is a charming piece of writing dedicated to the Society for the Encouragement of Arts, Manufactures and Commerce of London. He had been elected a corresponding member of the Society some time before this essay was written, and the Society showed its appreciation of the achievement of their colonial member by promptly voting him their gold medal. The letter giving notice of the award reached Dr. Eliot in the middle of April, 1763, nine days before his death. The medal itself was received in October, 1764, appropriately enough by his steel-making son, Aaron.⁶⁸

It may be noted in passing that the activity just described was in large part done in contravention of the English regulation of 1750, forbidding the erection of iron works and the making of steel in the Colonies. The contradictory conditions that permitted an eminent society in England to award a gold medal in recognition of an achievement forbidden by the Government may have encouraged the independent Connecticut people to open and continued disobedience.

⁶⁷ The title page of a copy of this rare pamphlet in the Yale University Library reads: An Essay on the Invention, or Art of Making very good, if not the best IRON, from Black Sea Sand. By Jared Eliot, M.A. of Killingworth . . . New York. Printed and Sold by John Holt, at the New Printing Office near Burling's Slip, 1762.

⁶⁸ These statements are based on memoranda in Ezra Stiles' handwriting on a blank leaf of the *Sand Iron Essay* in the library of the Massachusetts Historical Society.

THE HISTORY OF AGRICULTURE AND THE ROSENWALD MUSEUM

BY WALDEMAR KAEMPFERT, *Director*

Through the generosity of Mr. Julius Rosenwald and the energy of the South Park Commissioners the city of Chicago is destined to have a technical, industrial museum which will compare favorably with the foremost institutions of a similar character in Europe. Inspired by the extraordinary success of the Deutsches Museum created in Munich by Dr. Oskar von Miller Mr. Rosenwald has endowed the Chicago museum with the sum of three million dollars which is to be expended largely in the preparation and acquisition of suitable exhibits. The South Park Commissioners have issued bonds for five million dollars which sum is to be applied in reconstructing in fire-proof form the beautiful Fine Arts building which still stands in Jackson Park, which once housed the collections of the Field Museum and which is a crumbling reminder of the architectural beauty of the International Columbian Exposition of 1893.

In this building, which will have a total floor area of some 400,000 square feet, the evolution of science and industry is to be traced from primitive beginnings to the present day. Original models of epoch-making apparatus, inventions and machines are to be installed whenever they can be procured. Since some of these are already in the possession of museums accurate reproductions must be made in many cases. A large proportion of the models will be operative. In other words the visitor will see the wheels go round—see and learn the underlying technical reason for the industrial success of many a machine which is to him a mystery. Wall paintings and charts will supplement the models.

A whole division in the museum will be given over to agriculture and forestry. Here the technical history of plowing, sowing and

reaping will be traced. How the products of the soil and the forest are converted into food, clothing and a thousand useful products will likewise be explained with the aid of exhibits which are to be as tellingly dramatic as possible. So the visitor will see how farming has progressed from the days of Abraham to the days of the bonanza farm which is so highly mechanized that muscular power plays but a small part in its activities.

The indebtedness of industry to the farm and the forest will become the consideration of a division which will be given over to industrial chemistry. Here it will become apparent that in the evolution of agriculture the farm has become the provider not only of raw material for the manufacture of food and clothing but of raw material for industries that were undreamed of fifty years ago. That the cellulose by-products of the farm, such as its husks, cobs, and straw, may yet become as valuable as grain itself seems already a foregone conclusion in the light of the recent extraordinary advances which have been made in converting cornstalks into rayon and oat hulls into furfural.

The Rosenwald Industrial Museum will be far more than a slavish copy of similar institutions abroad. In Europe only the scientific and engineering aspects of industry are exemplified by models, paintings, and charts. All this and something more will be done in Chicago. That something more is nothing more or less than the economic and social interpretation of industrial progress. When the flail gave way to the threshing machine, the forked stick to the iron plow, the scythe to the reaper how did society profit? The best mill of Pericles' time produced five barrels of flour a day. The civilization of Greece was based on slave power. A modern Minneapolis mill will produce more flour in a day than an Athenian mill could produce in fifteen years. Such examples as these will be utilized to teach the lesson of social progress through science and the machine.

BOOK REVIEW

HISTORY OF AGRICULTURE IN COLORADO. By Alvin T. Steinel; D. W. Working, Collaborator. Published in Honor of the Fiftieth Anniversary of the Admission of Colorado to the Union, by the State Agricultural College, Fort Collins, 1926, 659 p.

The history of agriculture is for the most part an undeveloped field. The occupation which has engaged the attention of so large a portion of the American people may well merit the detailed attention of a comprehensive account for each state. Therefore, this work by experts in the field of agriculture for the state of Colorado is quite welcome.

The idea of the method of treatment may probably be best obtained from the titles of a number of the chapters. Such topics as; "Beginnings of Colorado Agriculture," "Rural Life of the Pioneer Period," "The Range Live Stock Industry," "Irrigation," "Dry Farming," "History of the Sugar Beet Industry," "United States Reclamation Projects," and "Agricultural Education," are included.

The subject matter is divided topically into chapter or sub-chapter headings. The treatment is chronological within the chapter or sub-chapter divisions.

The treatment of the geographic background is hardly adequate. There is no description of the soil, and typography is inadequately handled. Perhaps it is hardly the part of a commemorative history to call attention to the less flattering aspects of its geographic endowments for agriculture.

Rural life of the pioneer period is treated entirely from the productive point of view. The social aspect of rural life is not mentioned. Despite the scattered character of the settlement this is an aspect of rural life which deserves attention.

It is a defect of the topical form of treatment that the subject as a whole is never depicted at any one time for the reader. The

picture in the reader's mind is always an aspect rather than the whole, and his map is left only specked with local developments. However such a treatment is probably most acceptable for experts in agricultural schools who are interested in special fields of agriculture rather than the subject as an entirety.

The complexity of the authors' problem was increased by the great diversity of the developments which have occurred. They have, however, failed to leave the impression of any well marked periods of change.

Historians may well raise the question whether the state is to be the proper unit for the treatment of agricultural history. The same considerations which have lead historians to disregard state boundaries in other aspects of history apply to the field of agricultural history.

This book is well edited and printed but only partially annotated. It is enlivened with numerous well chosen illustrations. The work is a mine of information which will be especially useful to the agricultural students of Colorado.

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NEWS NOTES AND COMMENTS

THE AGRICULTURAL HISTORY SOCIETY

The Agricultural History Society will meet with the American Historical Association and other learned societies in Indianapolis on December 28, 29 and 31. The joint session of the Agricultural History Society and the American Historical Association is scheduled for Saturday morning, December 29. The Society's president, Dr. Solon J. Buck, will act as chairman. Arthur Preston Whitaker, professor of history at Western Reserve University, will read a paper on Spanish Contributions to American Agriculture; Earle D. Ross, professor in the department of history and government in the Iowa State College of Agriculture and Mechanical Arts, a paper on Lincoln and Agriculture; and Ernest S. Osgood, instructor in history at the University of Minnesota, a paper on the Cattleman in the Agricultural History of the Northwest. St. George Leakin Sioussat, professor of American history at the University of Pennsylvania, will speak on Colonial Land Tenure at the Agricultural History Society luncheon which has been tentatively scheduled for Saturday noon, December 29.

The Agricultural History Society has recently received a check from Dr. Rodney H. True for life membership in the Society. Maturin L. Delafield of 29 Avenue Davel, Lausanne, Switzerland, and Lyman Carrier of Coquille, Oregon, were the first to become life members. A biographical note appended to an article by Dr. True, which appears elsewhere in this number of *Agricultural History*, briefly indicates the interest which Dr. True has taken in the Agricultural History Society. An article by Dr. True on "Some Neglected Botanical Results of the Lewis and Clark Expedition" has just been published in the *Proceedings of the American Philosophical Society*, LXVII (1928), 1-19.

THE AMERICAN HISTORICAL ASSOCIATION

"The Central Theme of Southern History" is the title of an article by Ulrich B. Phillips which is printed in the *American Historical Review* for October. This article is to form the basis of a discussion at one of the sessions of the American Historical Association at its annual meeting in December. Professor Phillips contends that the South is "a land with a unity despite its diversity, with a people having common joys and common sorrows, and, above all, as to the white folk a people with a common resolve indomitably maintained—that it shall be and remain a white man's country. The consciousness of a function in these premises, whether expressed with the frenzy of a demagogue or maintained with a patrician's quietude, is the cardinal test of a Southerner and the central theme of Southern history."

A paper on the medieval manor by Professor Nellie Neilson will be discussed in a session devoted to medieval history at the annual meeting of the American Historical Association. The discussion will be on the basis of previous perusal. Although this paper will not be published until the January number of the *American Historical Review*, reprints will be available in advance for those who are interested.

A SOCIAL SURVEY OF AN AGRICULTURAL REGION

Under the title "A Coöperative Study of the Northwestern Central Region of the United States," in volume 22 of the *Publications of the American Sociological Society*, (Chicago, 1928), F. Stuart Chapin briefly describes an important social survey recently initiated by the University of Minnesota. The study takes for its unit of area "a geographic region consisting of the states of Minnesota, North Dakota, and South Dakota, with fringes of western Wisconsin, northern Iowa and Nebraska, and eastern Montana and Wyoming. . . . " The study is under the guidance of a committee representing all the social science departments of the University of Minnesota, but the leaders hope to secure coöperation from the social science depart-

ments of other universities in the region. It is expected that the study will extend over two decades. As a first step, a bibliography of 2,700 titles was compiled. An interesting result of this first step is the article by Joseph R. Starr entitled "Some Gaps in the History of the Northwest" in the June number of *Minnesota History*. Believing that a knowledge of all the physiographic and geographic data which limit or characterize the region is necessary, in this kind of study, its organizers are having the departments of geography, geology, forestry, soils, and farm management coöperate in the preparation of an atlas of the area. This atlas is to provide "large base maps of the region upon which the chief facts of the temperature, sunlight, winds, distribution of metallic and non-metallic minerals, soils, and vegetation will be entered." From these facts, a transition is to be made to "unprofitable lands, crop production, distribution of animals, lines of transportation and communication, and distribution of manufacturing plants, wealth, human population, social resources, and social and political institutions." As Professor Chapin has said, "the survey will become in a very real sense a study of human ecology."

COMMENTS OF BOOKS AND ARTICLES

An interesting booklet, *The Origins of Agriculture*, by Harold Peake, has just been published by Ernest Benn Limited as part of Benn's Sixpenny Library. The author considers the following topics: The Problem, Where Did Agriculture Begin, The Case For Africa, The Case For Asia, When Did Agriculture Begin, and How Did Agriculture Begin.

"Farming Through the Ages," a series of historical cover pages and accompanying articles, is being printed by the *Prairie Farmer* to give its readers the historical background of agriculture. The first of this series appeared in the number for October 6.

"American Agriculture: Prehistoric Decadence" is the title of a paper which Vernon C. Allison of Linden, New Jersey, presented at a session of the International Congress of Americanists which met during the first week in October.

Pioneer Agricultural Journalists, by William Edward Ogilvie, is brief biographical sketches of fifteen early editors in the field of agricultural journalism. The author has been particularly interested in revealing the human side of these men and he has attempted to find out what the inspirations were that stimulated the founders of the farm press of America toward their efforts to provide forums for the improvement of American farming. The reproductions of the cover pages of early issues of the journals edited by these pioneers are a valuable part of the book. The book was privately printed by Arthur G. Leonard of Chicago in 1927.

"What to read on coöperation," in the July number of the *Coöoperative Marketing Journal*, is a six-page article by J. T. Hull which gives a brief résumé of the rise and progress of the modern coöperative movement and comments on the best literature on the subject.

Two excellent critical articles by Dr. John D. Black in the June and the September numbers of the *American Economic Review* are of interest to readers of *Agricultural History*. The first is entitled "The Progress of Farm Relief" and is "an attempt to trace the progress of farm relief in the United States, relate this progress to the changing fortunes of agriculture itself during the period, and roughly evaluate the various measures enacted and proposed." Dr. Black states that his motive was not only making a convenient record of the significant facts but "more largely to discover if possible the trends of thought underlying the various measures proposed and enacted, that we may be able the better to understand current and impending developments." The second article considers the McNary-Haugen Movement since its basic ideas first appeared in print in a pamphlet called *Equality for Agriculture* in 1922.

The June number of the *Maryland Historical Magazine* includes another instalment of the Maryland Rent Rolls.

A paper by William T. Miller on the Progressive Movement in Missouri is published in the *Missouri Historical Review* for July.

"When the Middle West Was Young; Driving Hogs to Mississippi River Markets in Missouri in the Sixties," by L. R. Grinstead, appears in *Wallaces' Farmer* for October 12. It is a popular but informing account of the various phases of the industries centering around the hog drives to Alexandria, Missouri, during the period 1848-1872 when it was a hog packing center.

"The Reaper as a Factor in the Development of the Agriculture of Illinois, 1834-1865," by Herbert A. Kellar, is one of the papers included in the *Transactions* of the Illinois State Historical Society for the year 1927.

The last instalment of "The Economic History of the Production of Beef Cattle in Iowa," by John A. Hopkins, was printed in the July number of the *Iowa Journal of History and Politics*. The State Historical Society of Iowa has also published this study in the Iowa Economic History Series.

In Cabins and Sod-Houses, by Thomas H. Macbride, is being published by the State Historical Society of Iowa. The book is described as "word pictures of places, persons, and events in a pioneer community in Iowa."

Recent issues of *Minnesota History* contain several articles of interest to readers of *Agricultural History*. The March number contains a study of Daniel Webster and the West by Clyde A. Duniway, chairman of the history department of Carleton College. The June number has an article on Claim Associations and Pioneer Democracy in Early Minnesota. It is by Charles J. Ritchey, formerly a professor of history at Carleton College and now head of the history department at Macalester College. A section in this number entitled "Minnesota As Seen by Travellers" has an extract from Sir James Caird's *Prairie Farming in America* (New

York, 1859). The extract is prefaced with an excellent editorial note by Ernest S. Osgood of the University of Minnesota. The September number contains an article, "The Birth of the Populist Party," by John D. Hicks, head of the history department of the University of Nebraska.

La "Non-Partisan League" Une Experience Américaine de Socialisme d'Etat Agraire (Marcel Giard, Paris, 1928), by E. W. Burgess, is a study of the attempt made by the farmers of North Dakota to escape from the oppression of Eastern interests by using political power. The history is carried to 1926.

An article on the Hatcher Ditch, the oldest irrigation ditch now in use in Colorado, appeared in the June number of the *Colorado Magazine*.

"History of Pioneer Sheep Husbandry in Oregon," by Alfred L. Lomax, is included in the June number of the *Oregon Historical Quarterly*.

La Réforme Agraire en Europe (Eglantine, Paris, 1928), by Arthur Wauters, a socialist, is an excellent synthetic survey of the agrarian revolution in fourteen countries. The book is based in part upon personal observation.

Grain Trade during the World War, by F. M. Surface, has recently been published by Macmillan Company.

In *Die Agrarpolitik des Schweizerischen Industriestaates* (Fischer, Jena, 1928), J. Landemann considers the policy of Switzerland in relation to the land and the industries connected with it.

"The Significance of the Corn Laws in English History," by C. R. Fay, is the title of an article included in the memoranda section of the *Economic History Review* for January, 1928.

